



Children's Museum of Houston

Pre/Post Classroom Activities

Guess My Shape

Rationale

It is the classic good vs. evil adventure as the dastardly Hacker attempts to overtake CyberSpace, but is continuously outsmarted by three curious kids and one cyberbird pal determined to stop him. Join forces with the CyberSquad, Matt, Inez, Jackie and Digit, in their quest to save CyberSpace as they zoom into *Cyberchase – The Chase Is On!*, an out-of-this-world, educational mathematics exhibit.

In this exhibit, children will enter CyberSpace through a special portal to explore favorite cybersites, including the *Control Central*, the *Grim Wrecker* and *Poddleville*. They will help the CyberSquad protect the virtual universe from the villainous Hacker while exploring math concepts such as place value, algebra, geometry, fractions and probability.

In this geometry activity, students will create various clues using characteristics of different geometric shapes. Students can create simple or complex clues to make guessing easier or harder for the other children. In the Cyberchase exhibit, students will use these geometric shapes to create three dimensional solids. This basic review of shapes will help students create a connection from the individual shapes, to a net (a flat shape that can be folded into a 3-D solid), and finally to the completed solid.

TEKS Objectives

V.C.1 (PreK): Child names common shapes.

V.C.2 (PreK): Child creates shapes.

K.8: The student uses attributes to determine how objects are alike and different.

K.9: The student recognizes attributes of two- and three-dimensional geometric figures.

1.6, 2.7: The student uses attributes to identify two- and three-dimensional geometric figures.

The student compares and contrasts two- and three-dimensional geometric figures or both.

3.8: The student uses formal geometric vocabulary.

4.8: The student identifies and describes attributes of geometric figures using formal geometric language.

5.7: The student generates geometric definitions using critical attributes.

Vocabulary

Your vocabulary for this activity will vary depending on the grade level and degree of difficulty desired. For example, a first grader will use clue words like corners, sides, etc. A fifth grader should use clue words like parallel lines, perpendicular lines, 90° angles, etc.

Background

According to the NCTM Curriculum Focal Points, children interpret the physical world with geometric ideas (e.g. shape, orientation, spatial relations) and describe it with the appropriate

vocabulary. They should be able to identify, name, and describe a variety of shapes and solids. They use basic shapes and spatial reasoning to model objects in their environment and to construct more complex shapes. This activity is another way to practice visualizing various shapes and identifying various attributes or different shapes. This activity is adaptable to various ages. Younger children can focus on basic shapes like squares and circles, where older children can focus on more difficult or advanced shapes like trapezoids and rhombi.

Materials

- Bag of different shapes
- Paper
- Crayons or pencils

Procedure

Set Up: This activity will take place over one class period and works best in small groups of 3-4 students. Set out paper and crayons (or pencils) and one bag of shapes per group for each group.

1. Decide who will pick a shape first.
2. Pick a shape from the bag, but keep it hidden from everyone else.
3. Describe the shape without saying what it is.
4. Give clues like the number of sides or number of corners.
5. The people guessing will draw the shape.
6. The first person that draws the correct shape gets to pick the next shape.
7. If there is a tie, the person who can also name the shape correctly wins.

Questions to ask

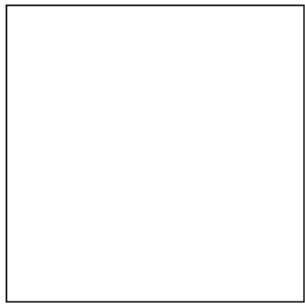
- Can you tell what the shape is with just one clue?
- What is the least number of clues needed to make sure it is a rectangle?

Extensions

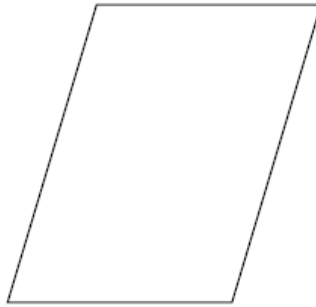
- Try this with solids instead of shapes. Use clues describing the faces, number of edges, and other attributes like whether it can roll or be stacked.
- Construct a building out of blocks. Draw a picture of the construction.
- Examine nets of various solids. For example, take apart different types of cartons, such as cereal boxes, and examine what type of 2-D shapes make up this 3-D container.

Resources

- Geometry *For Real*: A short real life clip featuring Harry as he uses 2-D shapes to make a 3-D solid: http://pbskids.org/cyberchase/forreal/113_for_real.html
- Create nets of various solids this online printable activity: <http://pbskids.org/cyberchase/games/23dgeometry/index.html>
- Free lesson plan: Boxed In CYBERCHASE Activity (2-D shapes to 3-D boxes) <http://pbskids.org/cyberchase/parentsteachers/lessons/lessonplans/lesson7.html>
- *Who Will Fix the Royal Windows? Story, Puzzles and Pattern-Play Blocks for Early Math Fun!*: Book by [Joanne Mattern](#) and [Paula Pertile](#). Children help rebuild windows as they arrange the pattern block pieces into the recessed pages. A fun and easy introduction to recognizing shapes, building patterns, and understanding spatial relationships and symmetries.



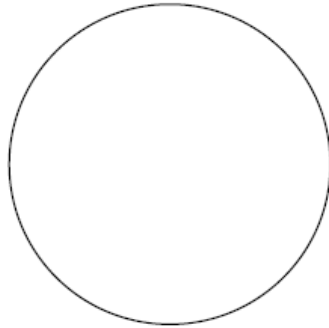
Square



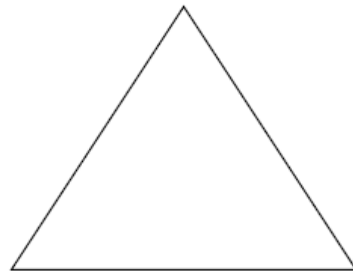
Parallelogram



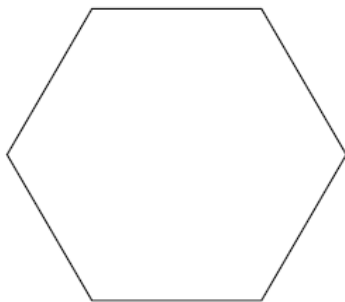
Rectangle



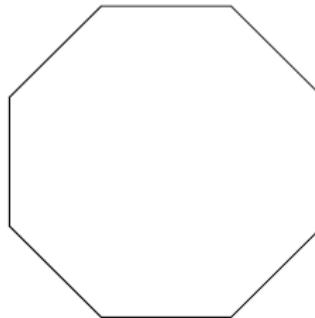
Circle



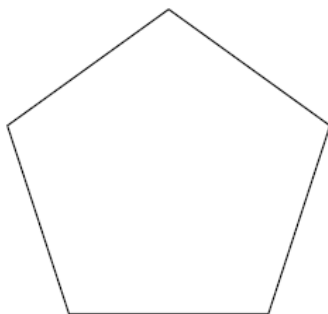
Triangle



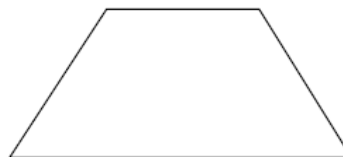
Hexagon



Octagon



Pentagon



Trapezoid